

PATENT
H0005667-3018

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Mark C. Morris et al. : Confirmation No.: 2263

Serial No. 10/734,922 : Group Art Unit: 3745

Filed: December 11, 2003 : Examiner: Richard A. Edgar

For: Gas Turbine High Temperature Turbine Blade Outer Air Seal Assembly

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Declaration Under 37 CFR 1.131

Sir:

An Office Action dated as mailed on May 25, 2005, and having a period of response extending through and including August 25, 2005 has been received by the Applicants. Applicants present this Declaration under 37 CFR 1.131 to show that their invention was reduced to practice prior to the effective dates of two references cited in the May 25, 2005 Office Action and prior to the filing dates of these references. The references of interest are US-2004/0120808 (Alford et al.) with an effective date under 35 U.S.C. 102(e) of June 24, 2004 and a filing date of December 20, 2002 and US-2003/0185674 (Alford et al.) with an effective date of October 2, 2003 and a filing date of March 28, 2002.

Applicants declare under oath as to the following facts:

1. Prior to March 28, 2002 and prior to October 2, 2003, we conceived shroud assemblies that embodied ceramic shroud segments having forward and aft hooks which engaged with forward and aft hanger hooks respectively. These shroud assemblies comprised a plurality of the ceramic shroud segments assembled circumferentially about a longitudinal engine centerline axis, a plurality of ceramic spacer seals positioned in contact with the ceramic shroud segments such that each one of the ceramic spacer seals is in contact with the radially outward side of two adjacent shroud segments for the purpose of sealing adjacent segments. In this regard, our shroud assembly embodied those features of the Alford et al. references which were cited by the Examiner as a basis for rejection of claims 1, 6, 7, 10, 11 and 12,

Our design is recorded on Allied Signal Drawing 5-122-210-01, This drawing is attached hereto as Exhibit A. ✓

2. Prior March 28, 2002 and prior to October 2, 2003, we conceived ceramic shroud segments having forward and aft hooks which engaged with forward and aft hanger hooks respectively. In this regard, our ceramic shroud segment embodied those features of the Alford references which were cited by the Examiner as a basis for rejection of claims 1, 6, 7, 8 and 10-12,

Our ceramic shroud segment design is recorded on Allied Signal Drawing 5-122-085-01. This drawing is attached hereto as Exhibit B. ✓

3. Prior March 28, 2002 and prior to October 2, 2003, we conceived ceramic spacer seals that adapted to be positioned in contact with ceramic shroud segments such that each one of the ceramic spacer seals is in contact with the radially outward side of two adjacent shroud segments for the purpose of sealing adjacent segments. In this regard, our ceramic spacer seal embodied those features of the Alford references which were cited by the Examiner as a basis for rejection of claims 1, 6, 7, 8 and 10-12. Our design

recorded on Allied Signal Drawing 5-122-089-01. This drawing is attached hereto as Exhibit C. ✓

4. Prior March 28, 2002 and prior to October 2, 2003, we operated engines with a method wherein ceramic shroud segments are provided circumferentially about a longitudinal centerline axis, a forward hanger radially outward from and forward of the ceramic shroud segments, an aft hanger radially outward from and aft of the ceramic shroud segments, and a plenum assembly between and in contact with the forward and aft hanger wherein cooling air is supplied to the plenum such that air impinges on the shroud segments, the forward hanger and the aft hanger. In this regard, our method embodied those features of the Alford references which were cited by the Examiner as a basis for rejection of claims 27, 30 and 32.

5. One example of a turbine shroud assembly embodying the present invention was reduced to practice and incorporated into a demonstrator engine built and tested in a U. S. Government program known as the Joint Turbine Advanced Gas Generator Phase II (JTAGG II) Program. Operation of the demonstrator engine occurred prior to October 2, 2003.

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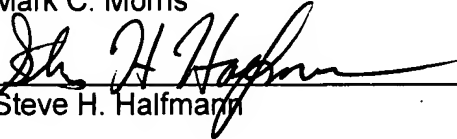
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All statements made herein of our knowledge are true, and further that these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both under 18 U.S.C. 1001, and may jeopardize the validity of any patent issuing thereon.

Dated: 7/28/05



Mark C. Morris



Steve H. Halfmann



Craig A. Wilson

Shawn J. Pollock

Carl A. Larson

Serial No. 10/734,922



Page 4

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Dated: 28 Jul 2005

Mark C. Morris

Craig A. Wilson

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Shawn J. Pollock

CA Larson

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Page 4

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Dated: July 28, 2005

Mark C. Morris

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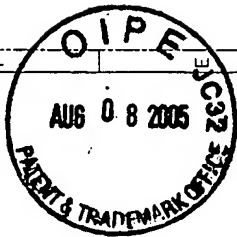
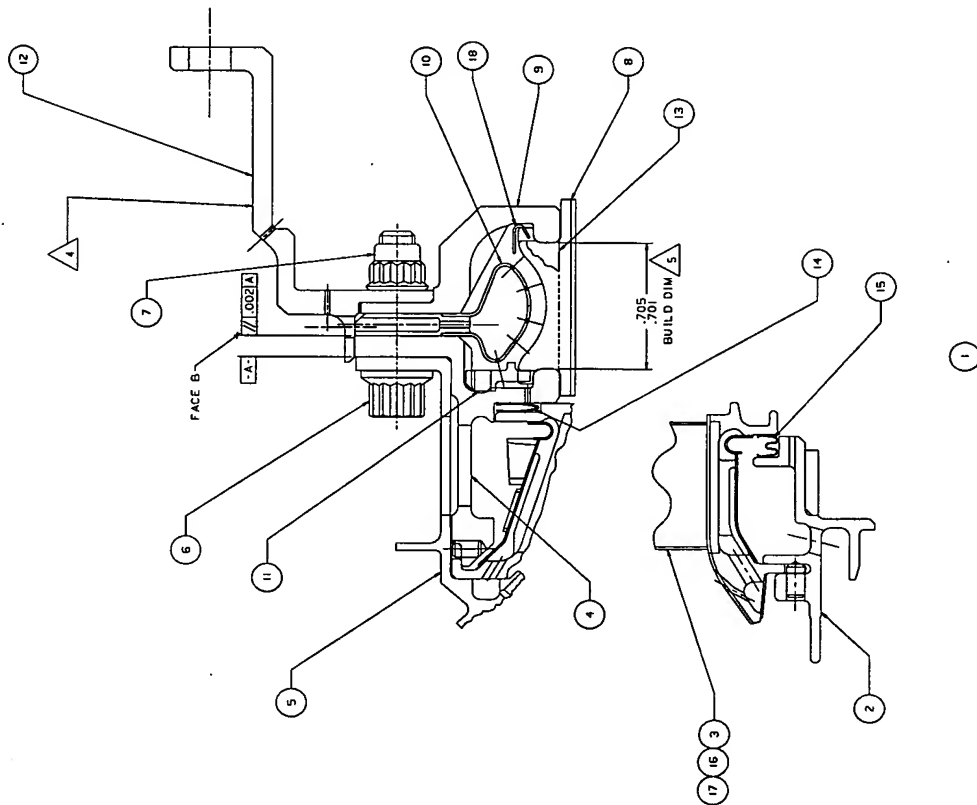


Exhibit A



6. VENDOR ITEM: PRESSURE SCIENCE INC., BELTSVILLE, MARYLAND, 20705-1294.
5. BUILD-UP ASSY CONSISTING OF FIND 4.9 AND 10.1 GRIND FACE B OF FIND 4 TO ACHIEVE .703 REF BUILD DIMENSION.
4. MARK PART WITH INFORMATION SHOWN WITHIN THE QUOTES PER AS478-782 OR TR3:
99193-5-122-210-01
3. INTERPRET MARKING REQUIREMENTS PER MSC014. APPLY INSPECTION & TEST MARKINGS PER MSC014.
2. SURFACE ROUGHNESS 125 MICROINCHES ALL OVER.
1. DRAWING INTERPRETATION PER SC6500.

QTY	DESCRIPTION	UNIT	REMARKS
1	18 5-122-093-01		RETAINER, SEAL
1	17 5-122-095-01		SEAL, STRIP, INNER
1	16 5-122-094-01		SEAL, STRIP, OUTER
1	15 PSI 13294		W SEAL, INNER
1	14 PSI 13292		Y SEAL OUTER HSG
1	13 5-122-099-01		SEAL, METAL HPT BOAS
1	12 5-122-089-01		SEAL, HPT BOAS
1	11 5-122-111-01		HOUSING, OUTER
1	10 5-122-092-01		SPRING
1	9 5-122-260-01		PLENUM ASSY
1	8 5-122-113-01		HOUSING, SUPPORT AFT
1	7 5-122-088-01		SEGMENT, METAL BOAS
1	6 5-122-085-01		SEGMENT, HPT BOAS
1	5 5-122-121-0003		NUT, 190-32UNJF
1	4 5-122-091-01		BOLT, 190-32UNJF
1	3 5-122-310-01		HOUSING, NOZZLE SPRT
1	2 5-122-070-01		HOUSING, SUPPORT FWD
1	1 5-122-070-01		NOZZLE SEGMENT ASSY
1	1 5-122-250-01		SUPPORT HOUSING
1	1 5-122-210-01		NOZZLE & SHROUD ASSY
1	1 5-122-210-01		NOZZLE & SHROUD ASSY

3409-245046-15-0101 L3749440/L3749469

312603 11

3409-245046-15-0101

NOZZLE & SHROUD ASSY, HP TURBINE

E 99193 5-122-210-01

SCALE 1/1

SHEET 1 OF 1

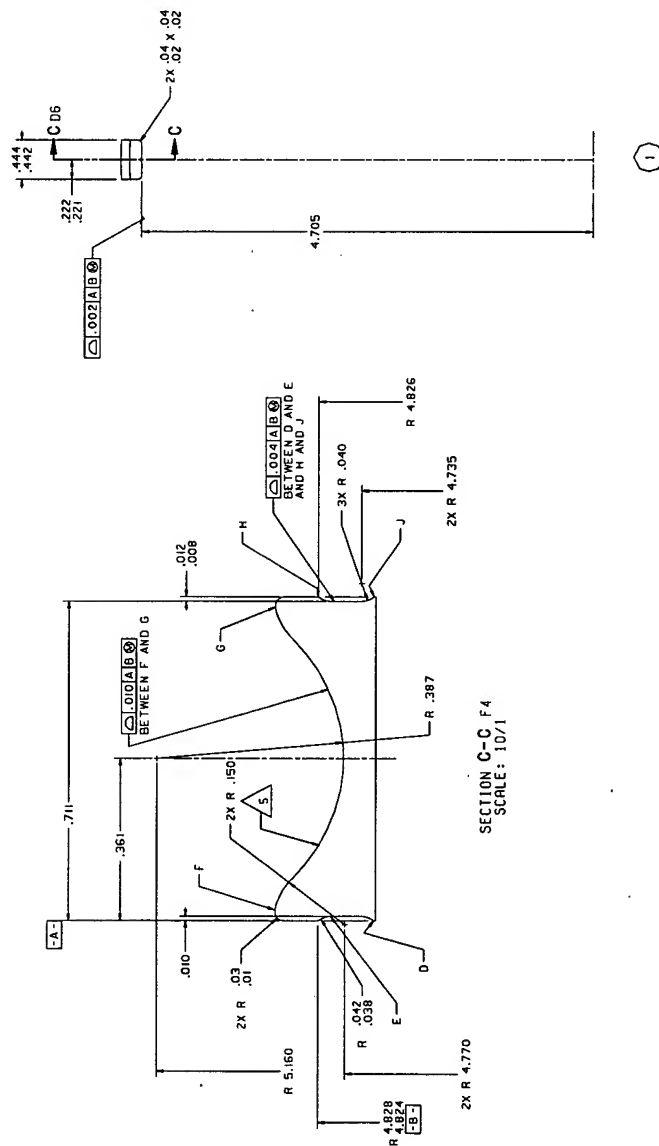
SECTION D-D 103
SCALE: 4/1

Exhibit B

7. SURFACE ROUGHNESS 75 MICRONS ALL OVER.
8. MATERIAL : SC56519 M4.
9. POINT LOCATED AT INTERSECTION OF ADJACENT FACE AND DIAMETER.
10. NO MATERIAL SUBSTITUTIONS AUTHORIZED WITHOUT PRIOR ENGINEERING APPROVAL.
11. MARK PART WITH INFORMATION SHOWN IN THE QUOTES PER AS1748-30 OR PF5025.
"31913-5-12-085-01"
12. INTERPRET MARKING REQUIREMENTS PER MC3014.
13. DRAWING INTERPRET PER SC6500.

[illegible]

Exhibit C



SECTION C-C F4
SCALE: 10/1

SCALE: 10/1

NOTE	ZONES
NOTE LOCATIONS	

7. MATERIAL: SCSS/SJ/ENH. PROCURE FROM TEXTRON SPECIALT MATERIALS.
 8. INTERPRET MARKING REQUIREMENTS PER MC8014.
 9. APPLY INSPECTION AND TEST MARKINGS PER MC8014.
 5. MARK PART WITH IDENTIFICATION SHOWN WITHIN THE QUOTE'S PER AS478-30 OR FF5025:
- *98199-5-122-008-01*
4. UNTOLERANCED DIMENSIONS ARE BASIC.
 3. NO MATERIAL SUBSTITUTIONS AUTHORIZED WITHOUT PRIOR ENGINEERING APPROVAL.
 2. SURFACE ROUGHNESS 125 MICROINCHES ALL OVER.

[illegible]